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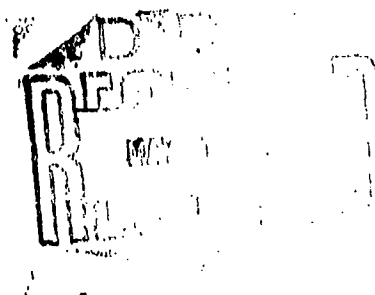
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NEED SATISFACTION IN THE IDENTIFICATION OF THE DOR

Steven F. Bucky, and John Burd



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SUMMARY PAGE

THE PROBLEM

The purpose of the present study was to determine whether: 1) student pilots who voluntarily drop from the program (DORs) and those who successfully complete training enter the flight program with different "needs," and 2) whether DORs and "completers" differ in their evaluation of the program's ability to satisfy their needs. The needs that were explored were those of the Maslow hierarchy, including physiological, safety and security, social, self-esteem, and self-actualization needs.

Eighty-seven aviation officer candidates were given a questionnaire designed to measure optimism, relevance, and importance in terms of the five needs described above. They were given the test initially on the third day after entering the program (Time I), and then again after 9 weeks of training (Time II).

FINDINGS

The results indicate that DORs differ from completers in their evaluation of how well their needs are satisfied. Within the first 9 weeks of training, DORs indicated that meeting their needs was more "important," though they were less "satisfied" and "optimistic" than completers, particularly with regard to the self-actualization need.

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14. ABSTRACT The purpose of the present study was to determine whether: (1) student pilots who voluntarily drop from the program (DORs) and those who successfully complete training enter the flight program with different "needs," and (2) whether DORs and "completers" differ in their own evaluation of the program's ability to satisfy their needs. The needs that were explored were those of the Maslow hierarchy, including physiological, safety and security, social, self-esteem, and self-actualization needs. Eighty-seven aviation officer candidates were given a questionnaire designed to measure optimism, relevance, and importance in terms of the five needs described above. They were given the test initially on the third day after entering the program (Time I), and then again after 9 weeks of training (Time II). The results indicate that DORs differ from completers in their evaluation of how well their needs are satisfied. Within the first 9 weeks of the training, DORs indicated that meeting their needs was more "important," though they were less "satisfied" and "optimistic" than completers, particularly with regard to the self-actualization need.		

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INTRODUCTION

From 1960 to 1966, approximately 32 per cent of all student naval aviators did not complete flight training. Slightly more than a third of this attrition group dropped at their own request (1). To support the need of the Naval Air Training Command for the early identification of potential attrition among flight students, the present study was conducted to determine whether: 1) student pilots who voluntarily drop from the program (DORs) and those who ultimately complete training enter the flight program with different "needs," and 2) whether DORs and completers differ in their evaluation of the program's ability to satisfy these needs.

Previous research has indicated that each individual strives toward the fulfillment of various hierarchical needs. A hierarchical need implies that some needs must be satisfied in order for the individual to be able to strive toward the fulfillment of the needs at the next highest level (e.g., once one's physiological needs are met, one then works toward the satisfaction of safety and security needs, etc.) Maslow suggested the following hierarchical organization: physiological needs, safety and security needs, social needs, self-esteem needs, and self-actualization needs (3). Physiological needs focus on the individual's sense of physical well-being. Safety and security refer to how well protected he feels. Social needs reflect the individual's opportunity to develop close relationships with others. Self-esteem concentrate on the individual's feelings of worth. Self-actualization focuses on the individual's feeling of fulfillment.

In using such a paradigm, it would appear that DORs may be bringing different needs to the training program and, therefore, may view the program as being more or less satisfying to their needs. As a result, a questionnaire (4) was devised to evaluate: 1) the student's optimism in terms of his feeling as to how well the program is able to meet his needs; 2) how relevant each need is to him; 3) how important the student views the ultimate satisfaction of each need; and 4) the student's satisfaction with regard to the program's ability to fulfill the various needs.

PROCEDURE

SUBJECTS

The subjects were 87 aviation officer candidates (AOCs). Of this initial group, 64 completed the aviation training program and 23 voluntarily withdrew. Each AOC was given the questionnaire twice: Initially, on the third day of the program (Time I), and again after 9 weeks (Time II). Those who did not remain in the flight program for at least 9 weeks were excluded from the study.

QUESTIONNAIRE

The questionnaire consisted of 28 items, five of which measured physiological needs; seven were measures of safety and security needs; six were measures of the individual's social needs; three were measures of self esteem; ten were measures of the individual's need to be self-actualized. Each respondent was to evaluate each question three times, indicating: A) how much of the characteristic is presently connected with his position in the military (optimism); B) how much of the characteristic does he think should be connected with his position in the military (relevance); and C) how important is the characteristic to him (importance). Satisfaction was measured by the ratio of the degree of a particular characteristic present to how much should there be (A/B). Each response was placed on a seven-point rating scale, measuring the degree of the characteristic being rated, ranging from none, 1, to unlimited, 7.

RESULTS AND DISCUSSION

The results were analyzed by means of multiple regression and analysis of variance. The analysis of variance took the form of a 2x2x5x3 fixed design; the criterion measure was the mean of the seven-point rating scale. A similar unweighted-mean solution was made of satisfaction, using as the criterion measure the mean of the ratio of the optimism relevance judgment. The results in Table I indicate that the main effects of time, needs, and judgments, as well as all second-order interactions between them were significant at the .01 level or less. Inspection of the means of the main effects indicated that: (a) student pilots' evaluation of the program increased across time; (b) safety and security, social, and self-esteem needs were met in Maslow's hierarchical order, but physiological and self-actualization needs were met at about the same level as social needs; (c) judgments were in increasing order from optimism, relevance, to importance (Figure 1).

Of primary interest in Table I was the interaction of the group factor. Both the interaction of the groups with judgments (AD') and with judgments by needs (ACD') were significant at the .05 level or less.

Figure 1 presents schematically the significant interaction of groups with judgments (AD'). As may be noted, the DORs' profile (dashed line) tended to be lower than that of the completers on optimism and relevance, but crossed over and was higher on importance.

Figure 2 presents the significant interaction of groups with judgments by needs (ACD'). The main difference in group profiles may be seen to be within optimism (open circles) in which the largest difference between groups was self-actualization.

Table 1

Summary of Analysis of Variance--Unweighted Means Solution--Across
Three Judgment Categories: Optimism, Relevance, Importance

Source of Variation	df	MS	F	p
<u>Between Subjects</u>				
A' (Comp vs DOR)	1	3.8208	0.6788	ns
Subj w. groups (Swg)	62	5.5662		
<u>Within Subjects</u>				
B' (Time)	1	194.0691	101.7827	.001
AB'	1	1.2811	0.6718	ns
B x Swg	62	1.9067		
C' (Needs)	4	32.9786	37.1631	.001
AC'	4	0.1693	0.1907	ns
C x Swg	248	0.8874		
D' (Judgment category)	2	200.3337	161.7159	.001
AD'	2	5.5068	4.4452	.05
D x Swg	124	1.2388		
BC'	4	3.8053	8.6503	.001
ABC'	4	0.3830	0.8706	ns
BC x Swg	248	0.4399		
BD'	2	7.6529	20.7002	.001
ABD'	2	0.2116	0.5723	ns
BD x Swg	124	0.3697		
CD'	8	3.6850	15.6675	.001
ACD'	8	0.5735	2.4383	.025
CD x Swg	496	0.2352		
BDC'	8	1.3770	13.4079	.01
ABCD'	8	0.0860	0.8373	ns
BCD x Swg	496	0.1027		
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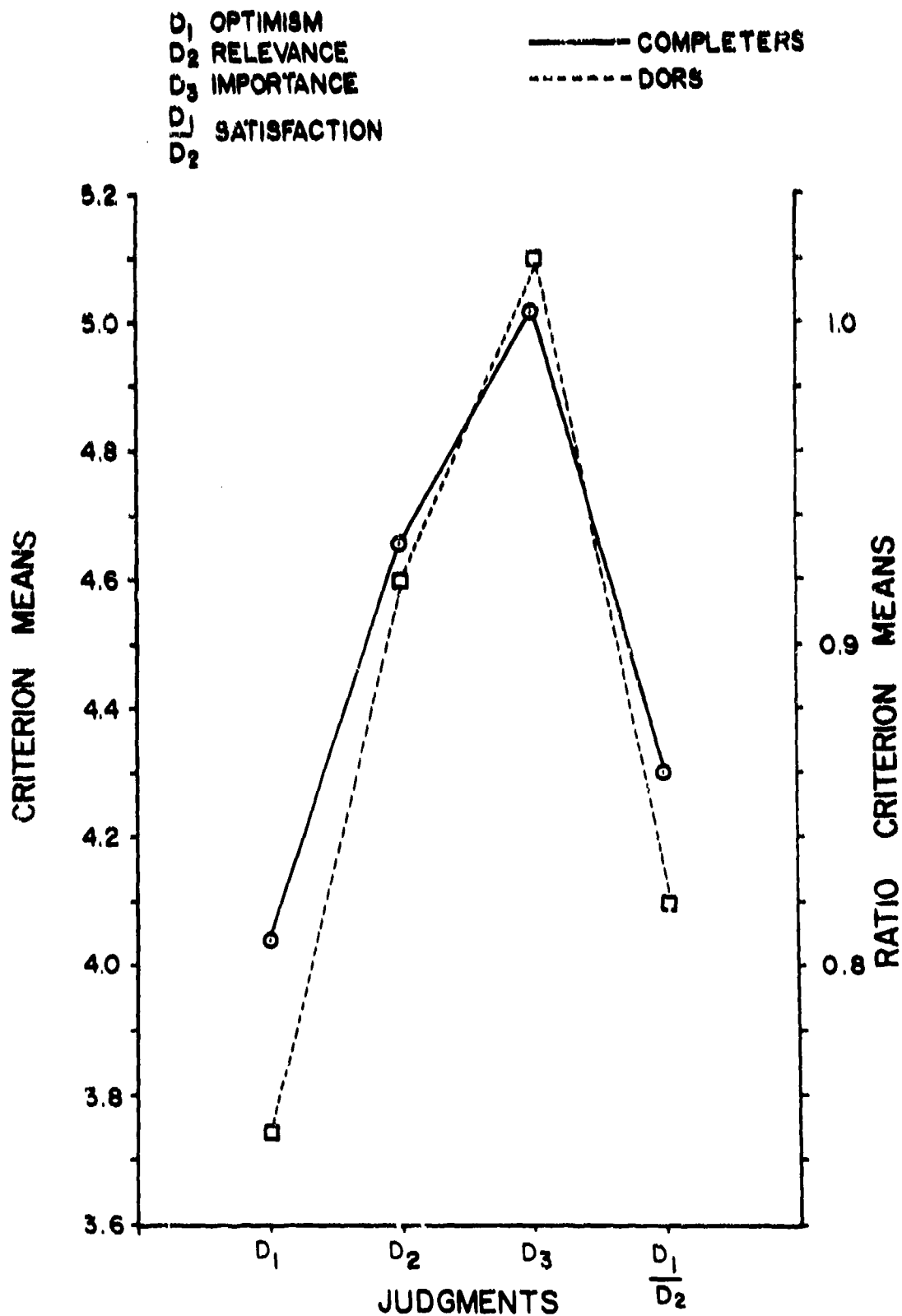


Figure 1

Composite Judgment Scores for Completers and DORS

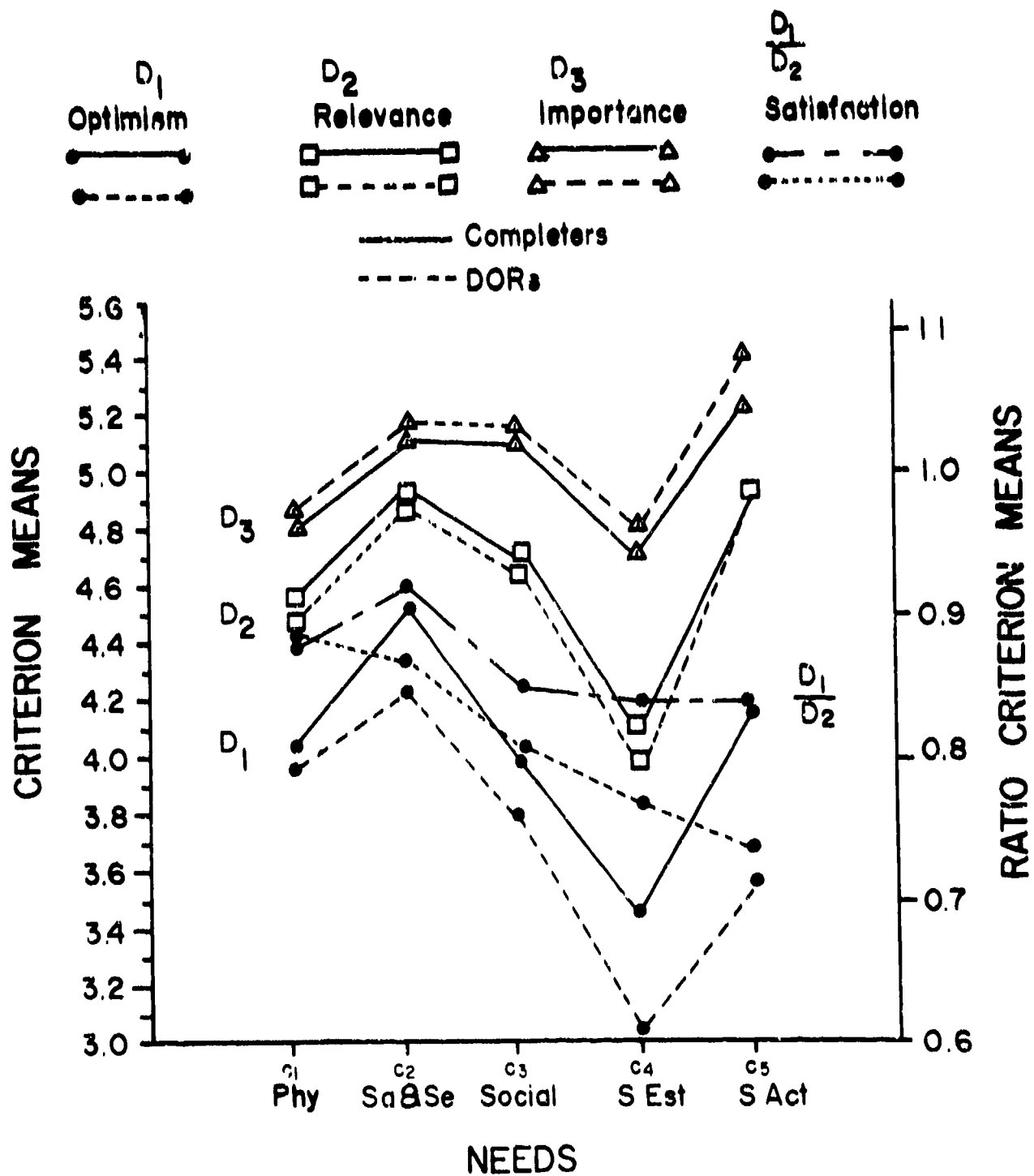


Figure 2
Interaction Between Needs and Judgments

The summary of analysis of variance of satisfaction (ratio of optimism/relevance) shown in Table II gave results analogous to those obtained using the judgment categories of optimism, relevance, and importance. In Figure 1, the significant ($p < .05$) main effect of groups (A') indicated that the completers were more satisfied than the DORs. The significant ($p < .01$) interaction of groups with needs (AC') presented in Figure 2 indicated that, within satisfaction (solid circles), the DORs' needs were satisfied in an almost linear descending hierarchy of physiological, safety and security, social, self-esteem, and self-actualization. The completers' needs were generally more satisfied on the last four listed needs; however, their social, self-esteem, and self-actualization needs appeared to be equally satisfied.

In order to determine whether the assumption of homogeneity was met in the unweighted-mean solutions, analyses of variance were made within each group. The difference between similar within-subject error variance terms was nonsignificant. Of interest in this area was the finding that all the error variances tended to be small in magnitude, except the completers' time \times subject ($B \times Swg$) error variance which, compared to that for the DORs, approached significance.

The results of the multiple regression analysis indicated that using any one of the following Time II variables—self-actualization/optimism, self-actualization/satisfaction, or self-esteem/satisfaction—discriminated between completers and DORs. Correlations of approximately .35 ($p < .01$) were obtained. Inclusion of more than one predictor did not add significantly to the variance accounted for of approximately 13 per cent.

The results described above present a number of implications for the prediction of the DOR. The DOR is less optimistic in terms of the program's ability to satisfy his needs (again, this does not include physiological needs). Satisfying the needs appears to be slightly more important for the DOR than for the completer.

It is worth noting that previous research has suggested that AOCs are a homogeneous group of subjects. They are all male, college graduates, approximately 21 years of age, who, in general, are highly motivated for a rigorous training program (2). The results of the present study suggest that, when separating the homogeneous AOC group into completers and DORs, the latter are even less variable than the completers. Such findings suggest that DORs may be more rigid and less flexible in their ability to adjust to various stressful situations.

Table II

Summary of Analysis of Variance - (Unweighted Means Solution) -
Judgment of Satisfaction - Optimism/Realism

Source of Variation	df	MS	F	p
Between Subjects				
A' (Comp. vs BOR)	1	0.3781	5.1442	.05
Subj. w. groups (Swg)	62	0.0735		
Within Subjects				
B' (Time)	1	0.3414	10.0411	.003
AB'	1	0.0112	0.3294	.56
B x Swg	62	0.0340		
C' (Needs)	4	0.2586	17.3066	.001
AC'	4	0.0343	3.4800	.01
C x Swg	248	0.0150		
BC'	4	0.1368	18.0000	.001
ABC'	4	0.0091	1.1923	.06
BC x Swg	248	0.0076		
	639			

REFERENCES

1. Aerospace Psychology Division, Naval Air Training student aviation statistics 1960-1966. Special Report 68-1. Pensacola, Fla.: Naval Aerospace Medical Institute, 1968.
2. Bucky, S. F., Spielberger, C. D., and Bale, R. M., Anxiety and the student naval aviator. NAMRL-1125. Pensacola, Fla.: Naval Aerospace Medical Research Laboratory, 1970.
3. Maslow, A. H., Motivation and Personality. New York: Harper and Row, 1954.
4. Schuh, A. J., and Trexler, J. T., Modification of questionnaire. In: Porter, L. W., A study of perceived need satisfactions in bottom and middle management jobs. J. Appl. Psychol., 45, 1-10, 1961.